Geography and Vegetation

By Todd Keeler-Wolf

California's diverse geography is reflected in its vegetation. Vegetation expresses the interrelationship between all facets of the physical environment, such as climate and geology, and the primary producers (plants) within that environment. Vegetation may be defined as the patchwork of plant species arrayed across the landscape. It includes a variety of life forms such as trees, shrubs, grasses, forbs, and non-vascular plants like mosses. These different life forms are distributed in different patterns across the land and result in the structure of the vegetation. The individual species of plants within a given patch of vegetation are also characteristic. Thus, vegetation consists of physical life forms and the species of plants that make up those life forms.

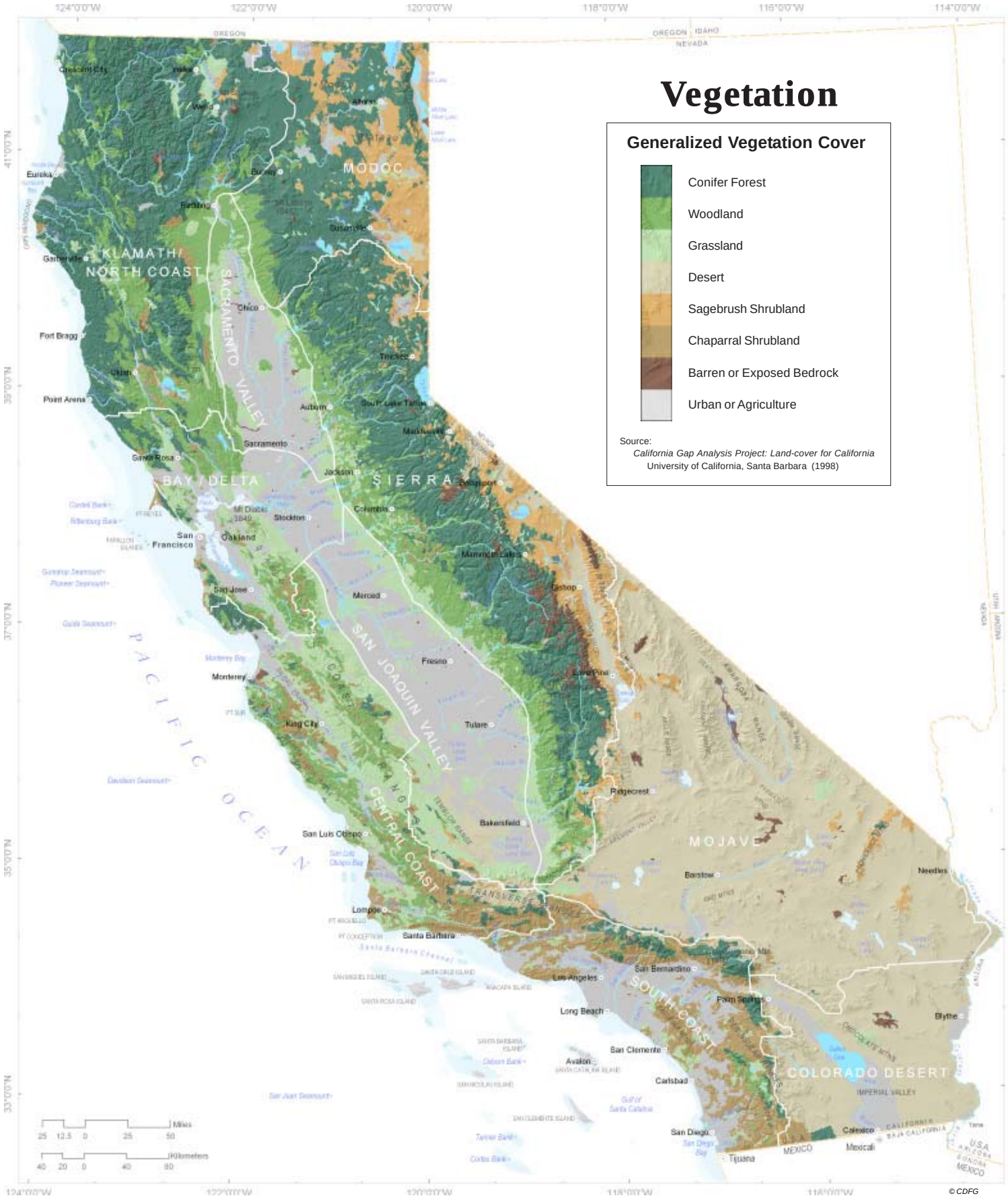
Wet meadow complex, Silver King Creek, East Fork Carson River, Sierra Region
Photo © Marc Hoshovsky

The broad patterns of vegetation in the state relate most clearly to the combination of temperature and moisture, which is, in turn, strongly influenced by California's varied topography. (See account entitled "Climate and Topography.") The most extreme climates—the coldest alpine environments and the driest deserts—are largely unvegetated. The cooler and wetter portions of the state are forested with coniferous trees while the drier and hotter portions are unforested and covered with desert scrub. Areas of intermediate temperature and moisture are covered with woodlands, grasslands, chaparral, and coastal scrub.

Coast sagebrush (*Artemisia californica*) alliance,
Garrapata State Park, Central Coast Region
DFG photo: Todd Keeler-Wolf

The effects of other important determinants of vegetation, such as soil fertility and depth, are influenced by topography and geology. These patterns are more easily seen at a finer scale than can be presented on the map at right. (See account entitled "Mojave Desert Vegetation" for a detailed map of vegetation types for a portion of the state.) Thus, within a general area climatically suitable for woodlands, we may see chaparral on shallower, steeper, and rockier soils; grasslands on deeper and less steep clay-rich soils; and woodlands on intermediate soils of gentle and moderate slope. The substrate on which vegetation grows may affect the species composition of certain broad types of vegetation. For example, vegetation on soils derived from serpentine, our state rock, may often be chaparral, but will be composed of very different species and be less dense than adjacent chaparral on soils derived from non-serpentine rock.

Coast redwood (*Sequoia sempervirens*) forest,
Klamath/North Coast Region
Photo © Marc Hoshovsky


Vegetation
Generalized Vegetation Cover
Conifer Forest
Woodland
Grassland
Desert
Sagebrush Shrubland
Chaparral Shrubland
Barren or Exposed Bedrock
Urban or Agriculture
Source:
California Gap Analysis Project: Land-cover for California
University of California, Santa Barbara (1998)
KLAMATH/ NORTH COAST
MODOC
SACRAMENTO VALLEY
BAY/DELTA
SIERRA
SAN JOAQUIN VALLEY
CENTRAL COAST
SOUTH COAST
MOJAVE
COLORADO DESERT
PACIFIC OCEAN
OREGON
NEVADA
IDAHO
MEXICO
Eureka
Redding
Susanville
Garberville
Chico
Fort Bragg
Ukiah
Point Arena
Truckee
Auburn
South Lake Tahoe
Markleeville
Sacramento
Santa Rosa
Jackson
Placerville
Columbia
Stockton
Mt Diablo
San Francisco
Oakland
Mammoth Lakes
Bishop
San Jose
Merced
Fresno
Monterey
Lone Pine
King City
Tulare
Ridgecrest
Bakersfield
San Luis Obispo
Barstow
Needles
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